REMARKS

Applicant adds new claims 12-14; therefore, claims 1-14 are all the claims pending in the application.

Applicant amends claims 1 and 6 explicitly to recite the feature of "stainless steel surfaces" as described in an illustrative non-limiting embodiment in paragraphs 20 and 22 of Applicant's specification. Also, Applicant rewrites claims 4 and 9 in independent form including the limitations of the original base claims 1 and 6, respectively. In addition, Applicant corrects claim 11 more properly to recite "lithography exposure system" rather than "lithography illumination system." Finally, Applicant adds new dependent claims 12-14, which parallel claim 11, in order to cover more fully in the claims various aspects of the invention.

The Examiner rejects claims 1-3 and 6-11 under 35 U.S.C. § 102(b) as being anticipated by JP 2000-315645 assigned to NIKON CORP. ("Nikon"), and claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Nikon in view of Phillips et al. ("Phillips").

Applicant respectfully traverses these rejections as follows.

Applicant's invention is in the field of optical beam guidance systems, and provides methods and systems that deal with contamination of optical components, while avoiding increase in reflectivity of the surfaces of the frames that are used for mounting the optical components. For example, it has been found that stainless steel, like other conventional materials, produces unwanted contaminations when used for frames mounting optical elements.

With regard to Applicant's independent claims 1 and 6, one of the features of the embodiments of the invention as claimed therein is "coating stainless steel surfaces of the frame

neighboring the beam guidance space at least partially with a degassing barrier layer" (claim 1; see also, claim 6). As noted above, one of the disadvantages of stainless steel frames addressed by the method and system as claimed in claims 1 and 6, is unwanted contaminations produced by such frames. Consequently, the degassing barrier layer is free of stainless steel. In contradistinction to Applicant's claims 1 and 6, the Nikon reference discloses and teaches the use of (thermally sprayed) stainless steel as the coating layer (30) to coat a base material (M), which may be iron, copper, aluminum etc., with an intermediate alumina ground film (30a) therebetween (see Nikon translation, Abstract and paragraph [0030]).

According to Nikon, "also stainless steel was used as a thermal spray material ..., you may use other metals, such as ...nickel-phosphorous" (Id., paragraph [0033]). The only use of the thermal spray material in Nikon is for surface coating (see also Id., the claims and the specification preceding paragraph [0033], e.g., paragraphs [0028]-[0032] which explain the use of the thermally sprayed (in these examples stainless) metallic film as coating).

In other words, not only does Nikon fail to disclose every step of the method as recited in claim 1 and every feature of the system as claimed in claim 6, Nikon teaches away from methods and systems which require coating a stainless steel surface with a degassing barrier layer. Therefore, Applicant's independent claims 1 and 6, as well as the dependent claims 2, 3, 7, 8 and 11 (which incorporate all the novel and unobvious features of their respective base claims) are not anticipated by (i.e., are not readable on) Nikon at least for this reason.

With regard to Applicant's independent claims 4 and 9, the cited prior art references do not disclose, teach or suggest using silver, gold, or tantalum layer as the degassing barrier layer. As to the alternative of using a Nickel layer, claims 4 and 9 require "a chemically deposited

nickel layer", which is found to be well suited as a degassing barrier layer for a degassing protection coat of a mounting frame for optical elements as recited in claims 4 and 9. As noted above, Nikon teaches forming stainless steel film 30 by cold thermal spraying (see Nikon translation, Abstract). Also, Nikon describes thermally sprayed NiP-coating (see Nikon translation, paragraph [0033]). The Examiner alleges that Philips describes coating of a lens support with nickel-phosphorous, and that it would have been obvious to modify the teaching of Nikon to use chemically deposited nickel layer in view of Philips (see Office Action, page 4). Applicant respectfully disagrees.

It is self-evident and well-known to one skilled in the art of optical beam guidance systems that the characteristics of a deposited layer depend to a large extent on the manufacturing method. The Nikon reference explicitly requires cold thermal spraying, "[s]ince the coat is formed by cold thermal spraying, the base material is prevented from being heated to the high temperature and the thermal distortion and the like are prevented from being added to the lens-barrel 16 and the connection barrel 18" (Nikon translation, Abstract). That is, an essential feature of Nikon is forming the coating by cold thermal spraying, and to modify Nikon to avoid forming the coating by cold thermal spraying would amount to changing the principle of operation of Nikon. Therefore, it would not have been obvious to one skilled in the art, when considering the teaching of the Nikon reference as a whole, to replace the cold thermal spray method described by Nikon with chemical deposition of Nickel layer as described by Phillips (see MPEP 2143.02).

Furthermore, Phillips teach the use of the NiP layer deposited by electroless plating to achieve a hard surface with low coefficient of friction (see Id. at, for example, col. 3, lines 30-

37). Nikon does not deal with the problem of achieving a hard surface with low coefficient of friction, instead it deals with forming a coat for reducing outgasing. There is no relationship between the coating characteristic of hardness and low coefficient of friction on the one hand and the prevention of outgasing on the other hand. Thus, it would not have been obvious to use the electroless paled NiP-layer of Philips (designed to yield a hard surface with low coefficient of friction) as an outgasing layer instead of the thermally sprayed coat of Nikon.

Therefore, Applicant's independent claims 4 and 9, as well as the dependent claim 5 (which incorporates all the novel and unobvious features of its base claim 4) would not have been obvious from Nikon and Phillips.[1]

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

[1] Applicant notes that, the Examiner rejects claim 9 under 35 U.S.C. § 102(b) as being anticipated by Nikon. In this regard, Applicant notes that Nikon does not disclose at least the feature of "a degassing barrier layer [which] is a chemically deposited nickel layer, or silver, gold, or tantalum layer". As explained above, this recitation defines specific structural characteristics of the degassing barrier layer, and therefore, should be given patentable weight. As further explained above, such structural characteristics are not disclosed or suggested by Nikon. Therefore, claim 9 is not anticipated by (i.e., is not readable on) Nikon at least for this reason.

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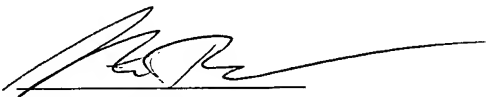
Respectfully submitted,



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23373
CUSTOMER NUMBER

Date: December 22, 2003